PHENIX
WEEKLY PLANNING

8/21/2008

Don Lynch

Technical Support 2008

Shutdown '08 Schedule

RPC Factory:	
Dark Current test stand	in design due 9/30
Mu Trigger FEE upgrade:	
Station 2/3 scaffolding	Done
Station 1 scaffolding	Done
Rack assembly	install in North by 8/22, South by 9/30
LV cable prep	Done
Optical cable prep	Done
N&S platforms Fabricate & install	fabrication complete, North platform is installed, install South by 9/30 (Pearson)
Rebuild Bridge & Eyebrow	Complete by 9/30
Prep work for platforms (water/elec)	in progress finish by 8/22
LV cable installation	Sta Station 2 & 3 Done, Sta 1 by 8/29
optical cable installation	Sta Station 2 & 3 Done, Sta 1 by 9/15
FEE installation N&S sta's. 1,2 & 3	Sta Station 1 & 2 Done, Sta 3 by 9/15

Shutdown '08 Schedule

Mu Trigger FEE Upgrade (cont'd):	
FEE water and dry air installation	Starts today finish by 9/30
Install S rack cooling & electric	Oct.after CM moves north
Install FEE's in MMS for RPC test	Oct.after CM moves north
Rack room electronics, etc.	Sep.– Oct.
Disassemble station1 scaffold	complete by Oct 15
Testing	Sep.-Nov. Complete by 11/15
RPC internal review	Sep.
RPC proptotype installation:	
Prep work	wait for final installation design
move (7) MuID pipes	
move gap 5 south cable tray	
Rack prep	In progress complete by Aug 29
RPC prototype gas system	In progress complete by Sep 30
Move shielding for installation	July - Sep [Pearson]
RPC prototype cable routing & support	Aug - Sep
Modify crystal palace & vapor barrier	July – Sep [Pearson]
RPC prototype install	
(RPC2 – PHENIX)	Sep. – Oct.
(RPC3 – C. Pearson)	Sep. - Oct.

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Shutdown '08 Schedule, cont'd

RPC proptotype installation (cont'd):	
Install rack in tunnel south	Install bt 9/30
Replace tunnel shielding/Vapor Barrier	Nov. [Pearson]
Connect electronics/gas	Sep. – Nov.
MuTr Decapacitations (Sta. 1 N and MMN)	North: (Station 1 and 3) done
	South: targets of opportunity
	Mike Leitch will be back 9/8/08
Fan Tray maintenance	in progress (on going fill-in)
PC1 west work (needs planning)	Oct. 15
CM Crane Install	[postponed indefinitely?]
HBD Install	Oct. 27
DC East?/West Repairs	Nov. 15
Remove all inst'n equipment	
Sta 1 (from south)	Remove by 1/15
Sta 2/3 scaffolds	Remove by 11/15
all other testing equipment	Remove by 12/1
Prep for shutdown 2009	
Gap 5 N piping and cable tray re-loc.	Oct. - Dec
Gap 2 N cable tray & crate re-mounts	Oct. – Dec.

Shutdown '08 Schedule, cont'd

Prep for run 9	
Begin run 9 Prep	12/1/09
Install all lampshades	Complete by 11/26
Roll in EC	12/22
Pink/White/Blue sheets	12/29
Close shield wall	12/31
Cryo Start up	1/1/09
Flammable Gas/start shifts	1/11/09
Start physics	1/18/09
End Run 9	6/30/09
Other Work	
VTX prototype design support	done, for now
NCC prototype design support	In progress finish in Sep
HBD support	as required
VTX fabrication tooling design	Sep – Oct
VTX installation design	Oct - Nov
FVTX design/engineering support	as required

Shutdown '08 Electrician Work

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1) Run Power to new MuTrgr FEE racks on MMN and MMS - *Final design of the reworked North Muon Power Distribution System is set. Nearly all material acquired eithout cost. Paul is m revising the One-Line electrical drawing. CAD approval required...maybe by next week. Effort should take ~ 1 week. The new power cable feed to the MuTrigger rack is installed (2 cables, 1 spare) with no connection to the panel down below. The new North side power panel is installed on the IR North east corner wall. The new 75 KVA transformer for the entire North Arm service is reconditioned and tested satisfactory. The power for the South RPC tunnel Rack(s) to be taken from an existing (spare) breaker in the Muon Tracker power panel. This should take less than 1 day to install.* **NO CHANGE**

PHENIX electrician needs to install vertical section of cable tray from North Magnet Lampshade to underside of new rack platform. CAD concurrence for construction details (Pearson) is required. **COMPLETED**

MuTrigger LV Rack construction to require 4 man days to complete starting Monday 8/11. See line 5 for update.

2) Install power feeds to RPC north & south tunnel racks from IR power panels. – *Plan is to run the cables from the IR to the North tunnel rack locations. The south RPC rack power can be taken from the existing (spare) breakers in the SMI power panel located on the IR south west wall. These cable runs may take a few days to complete due to new power tray runs required into the tunnel areas.* **Not done due to lack of manpower – working on other higher priority items.**

Shutdown '08 Electrician Work, Cont'd.

PHENIX

3) Install new UPS in Gas mixing house. Not done due to lack of manpower – working on other higher priority items.

4) Install power and signal cable tray (ceiling suspended) for new DCM rack row – north of existing DCM racks. - *on Hold until new floor plan is determined*

5) Assist in signal and LV cable installation for MuTr/RPC upgrades as necessary. Work in progress – Optical and LV cables installed. LV cables (rack end) are coiled on platform deck next to LV rack mount location. Optical patch rack installed with some cables connected into rack. Work on LV rack continues – not expected to be completed until later next week.

6) Upgrade power capacity of Central Magnet power distribution for future bridge rack loads.
   a) Remove existing 15KVA transformer and install 45KVA unit.
   b) Install new (larger size) power cable from rack room to Central Magnet distribution breaker panels.

   - *This job is on hold. No new racks in CM this year.*

7) Install 120 volt AC power drops into new control room annunciator alarm rack (rack room). Not done due to lack of manpower – working on other higher priority items.

8) Ordering parts for South MuTrigger LV rack. Rack plumbing complete. Internal wiring to start maybe end of next week.

9) Discussions started with Chi and Steve Boose concerning RPC prototype rack for south tunnel.

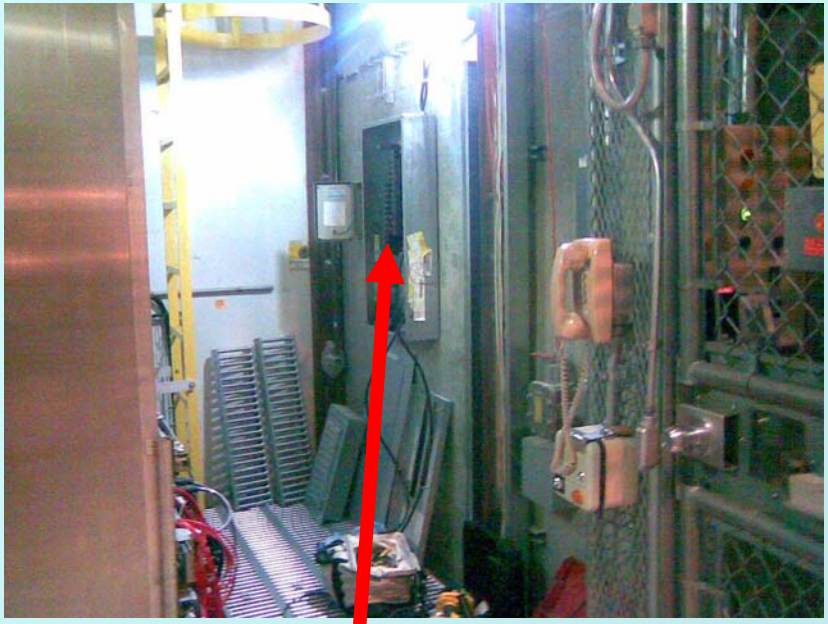
New FEE Platforms & Modified Bridge Parts

Mike Leitch needs access to eyebrow by 9/8

Replace modified bridge sections by ??

Install new South MuTrggr FEE rack platform by ??

MuTrigger FEE Rack Utilities



North FEE & Tunnel Electric Supply

Tees and Valves

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MuTrigger FEE Installation Prep

North & South Rack Prep

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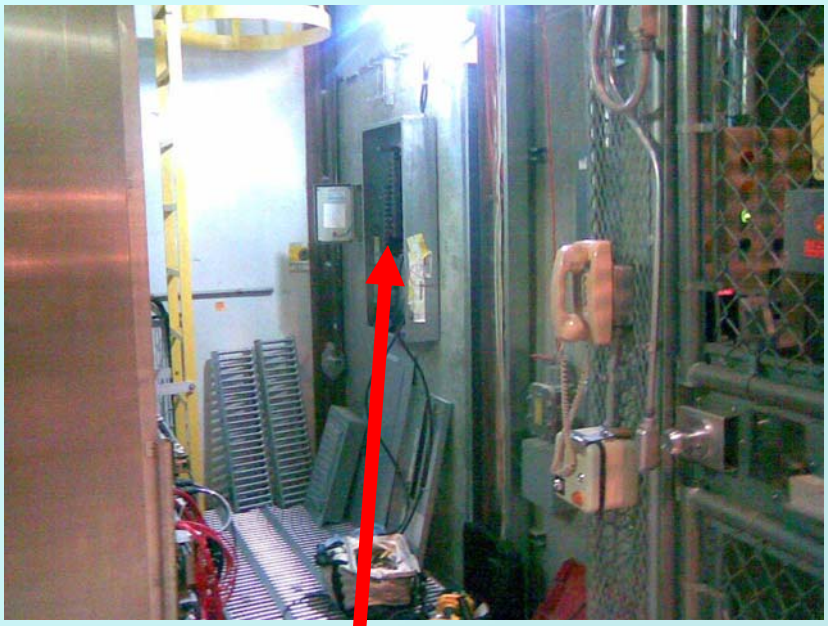
MuTrigger FEE Installation Prep



North FEE & Tunnel Electric Supply

MuTrgr FEE N Cable routing

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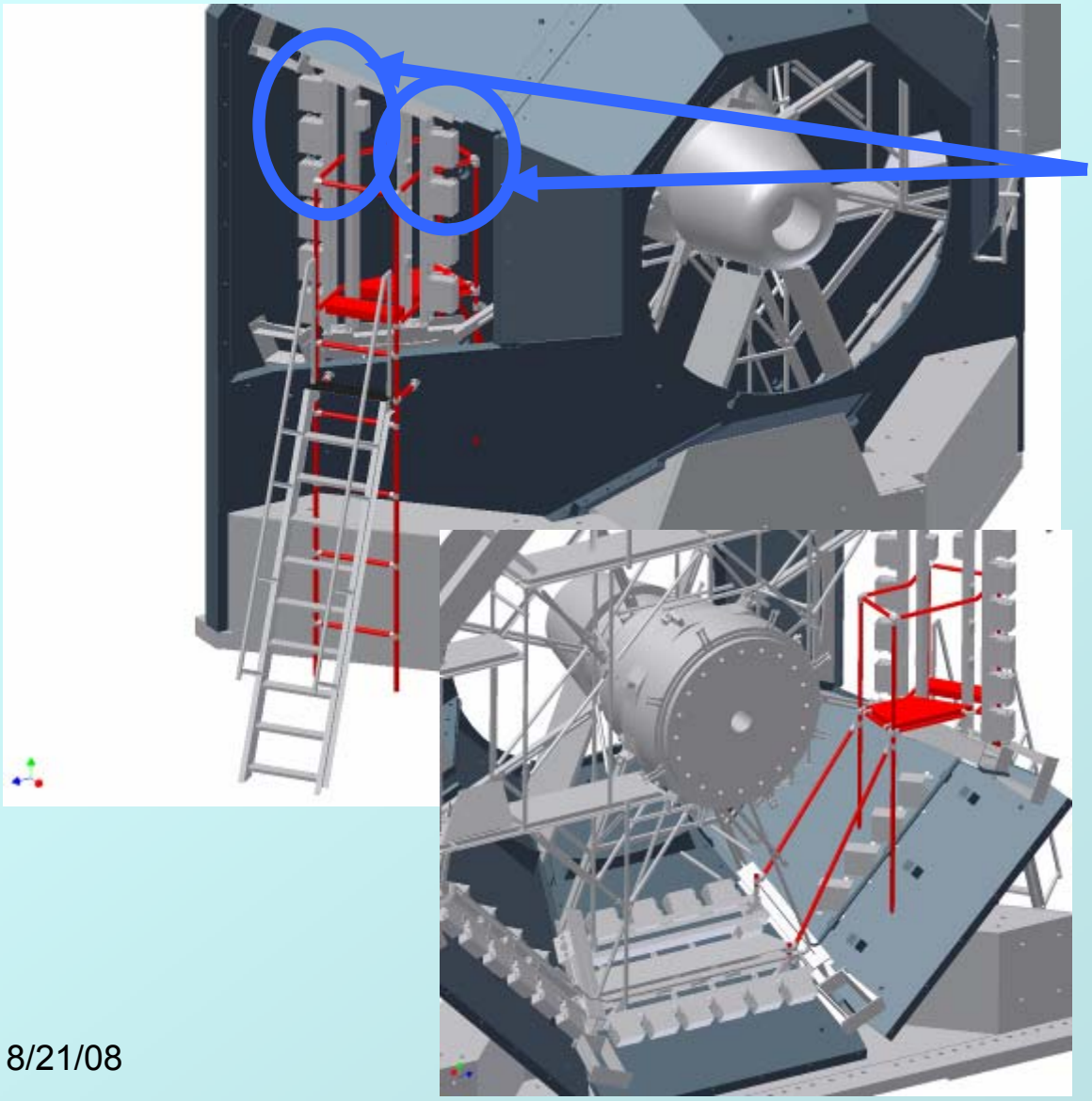
MuTrigger FEE Installation Prep

Station 1 cable management planning

Station 2 chasis installed

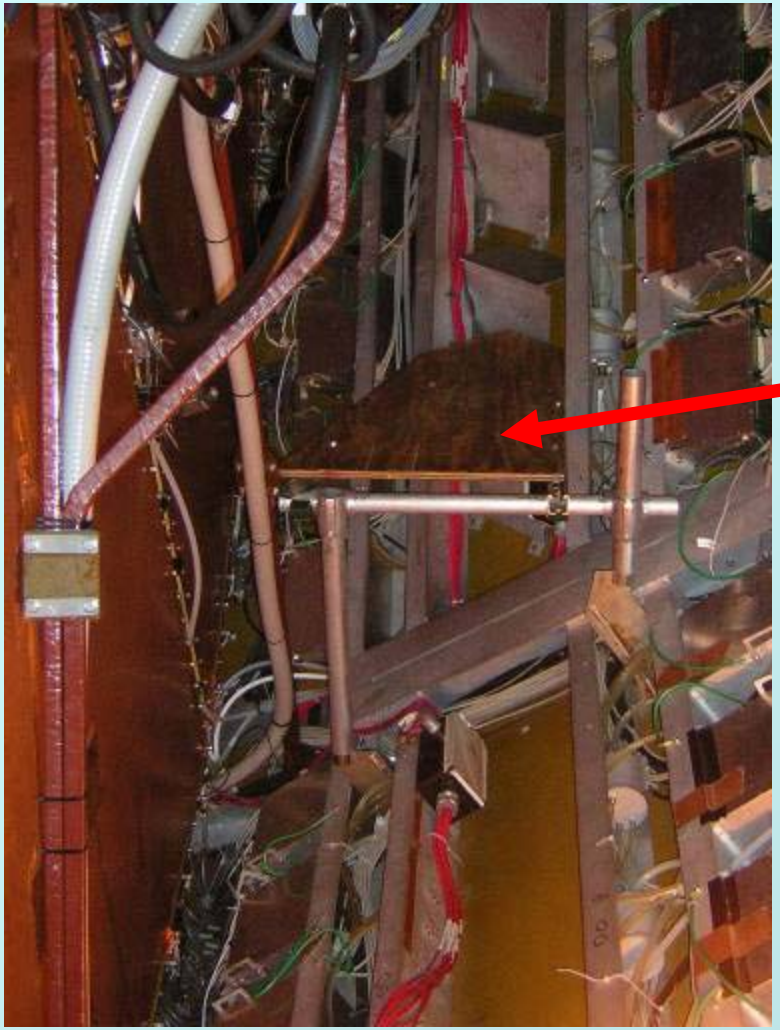
MuTrigger FEE upgrades in MMS in support of RPC prototypes



To match absorber and prototype RPC's, we need to install new FEE upgrades in these 5 MuTR FEE's

We will develop a plan to access these for installation and testing from a custom work platform (to be designed).

MuTr Decapacitations



MuTr group needs this setup from last year to work on decapacitations in the south magnet

MuTr FEE upgrade status

Tsutomu Mibe (KEK)
for the onsite upgrade team

Chassis status

- Preparation
  - Back plane and water leak test completed.
  - Completed assembling bottom plate and LV cable

- Installation
  - Completed Station-2 Mount. LV cables are all connected
  - Station-1 Chassis are mounted except for Octant 7.
  - Existing Cables are re-arranged for Octant 6 and 8.
  - Access platform for bottom octant. Engineering Design for Octant 7 to be discussed.
  - Station-3 Chassis to be Mounted.
  - Installation of cooling water tubes started.

LV Status

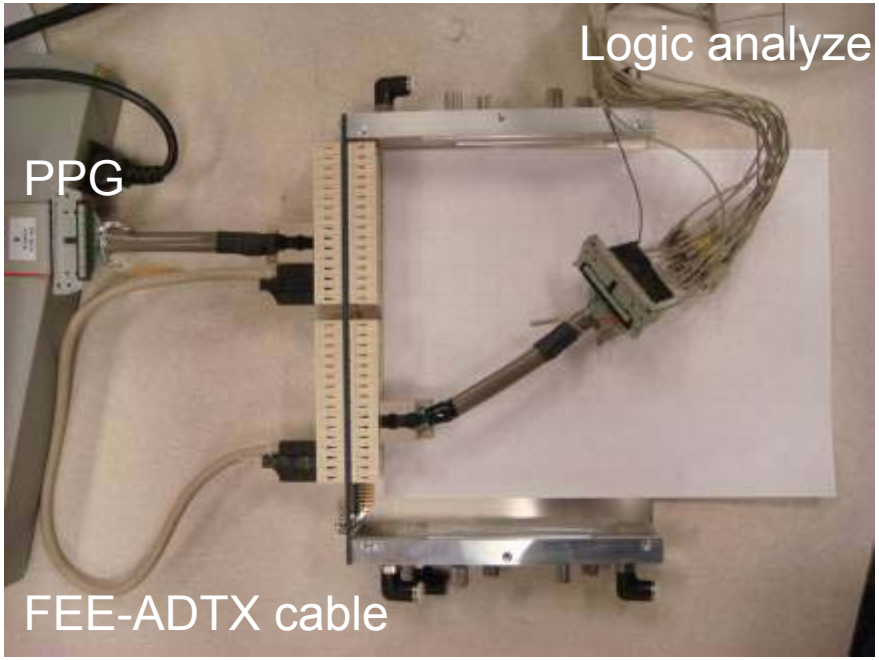
- New cable tray was installed.
- LV Rack Construction will be completed by Friday.
- To be tested with Distributor Boards
- Installed to the platform next week
- LV cables will be cut and connected to LV rack accordingly.

Optical Cable

- Completed chain test Station-2 and Octant-1 of Station-3.
- Two dead cables were found. Replaced with spare
- 5 more trunk cables to be delivered by the end of Aug.
- Station-1 cables are being installed.

FEE-ADTX cable

- 200 cables (30cm) were arrived on Monday
- Completed checking
  - Swap channels
  - Dead channels
  - All passed OK
- All mapping tables are available
- Ready for installation
- Need more 40cm cables for the station 1 installation, but may be available by the end of Sep.



1008 test bench status

- Chassis QA (completed)
- MRG-LL1 communication test (completed)

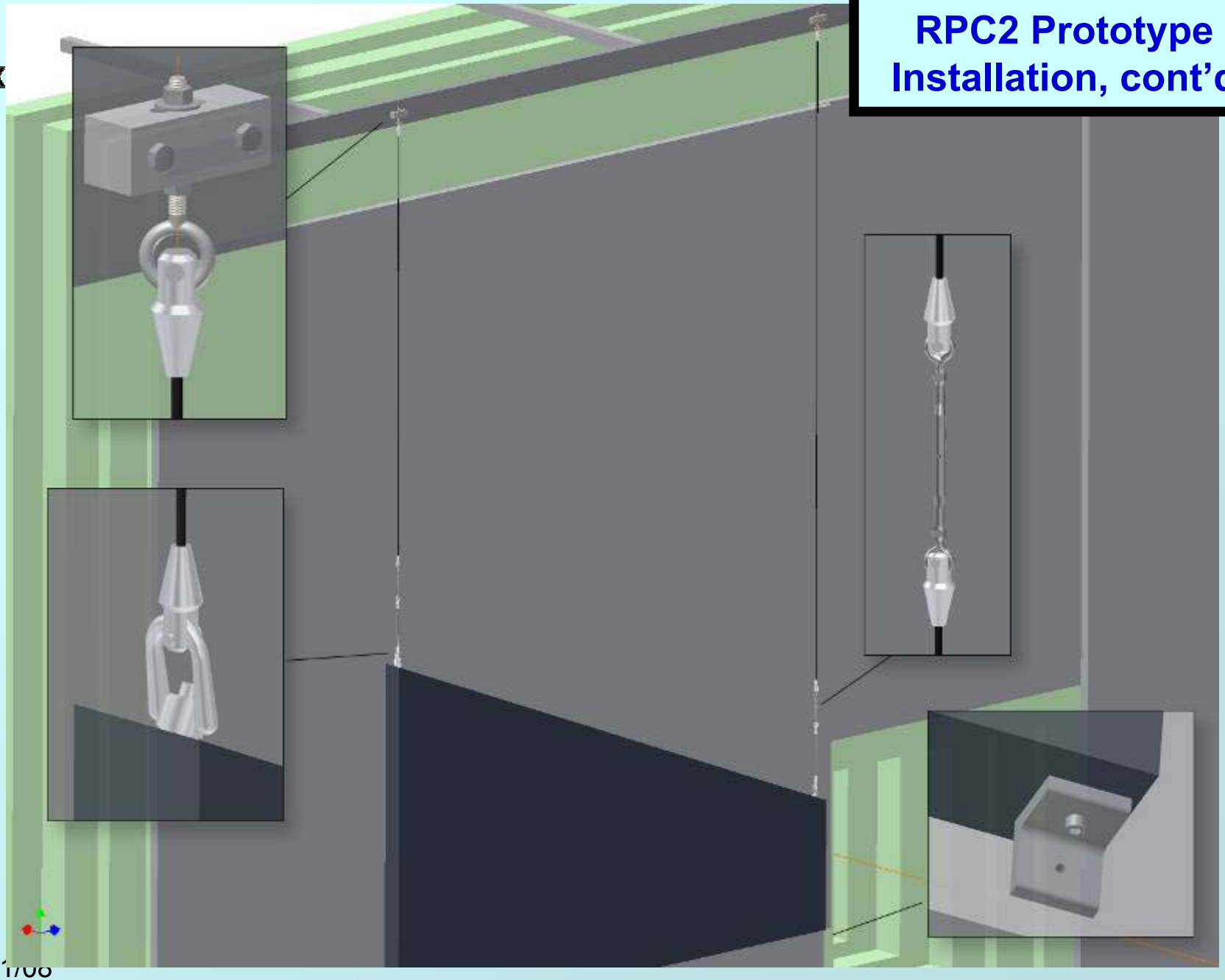
- Finalize FPGA design for ADTX (in progress)
- ADTX board QA preparation (in progress)
- MRG-ONCS (in progress)
- GTM-DCMIF (in progress)
- FEE-ADTX cable QA (partly done)

- DCMIF-DCM communication
- Full chain test (ADTX-MRG-DCMIF-DCM)
- ADTX board QA

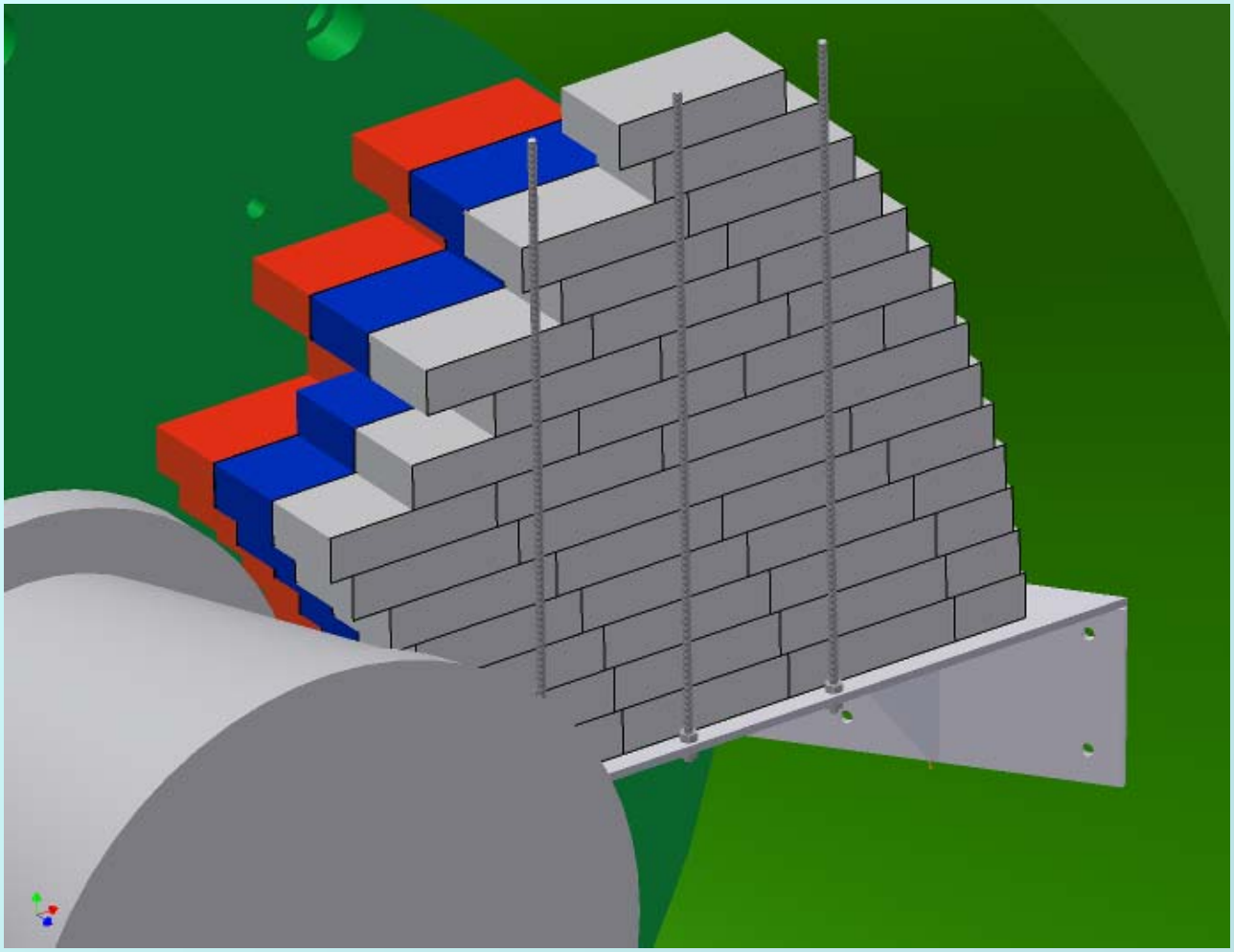
ADTX board production status

- Parts
  - In hand, for 20 boards
  - Remaining parts for 200 boards will be available by mid Sep.
- Board production
  - 20 boards will arrive at KEK in Sep 2nd. Expected to be here in mid Sep.
  - Remaining board may be produced by the end of Sep(?).
- QA
  - Burn-in at KEK
  - Full-QA at RIKEN test bench
  - Simplified-QA at 1008 test bench

RPC2 Prototype Installation, cont'd



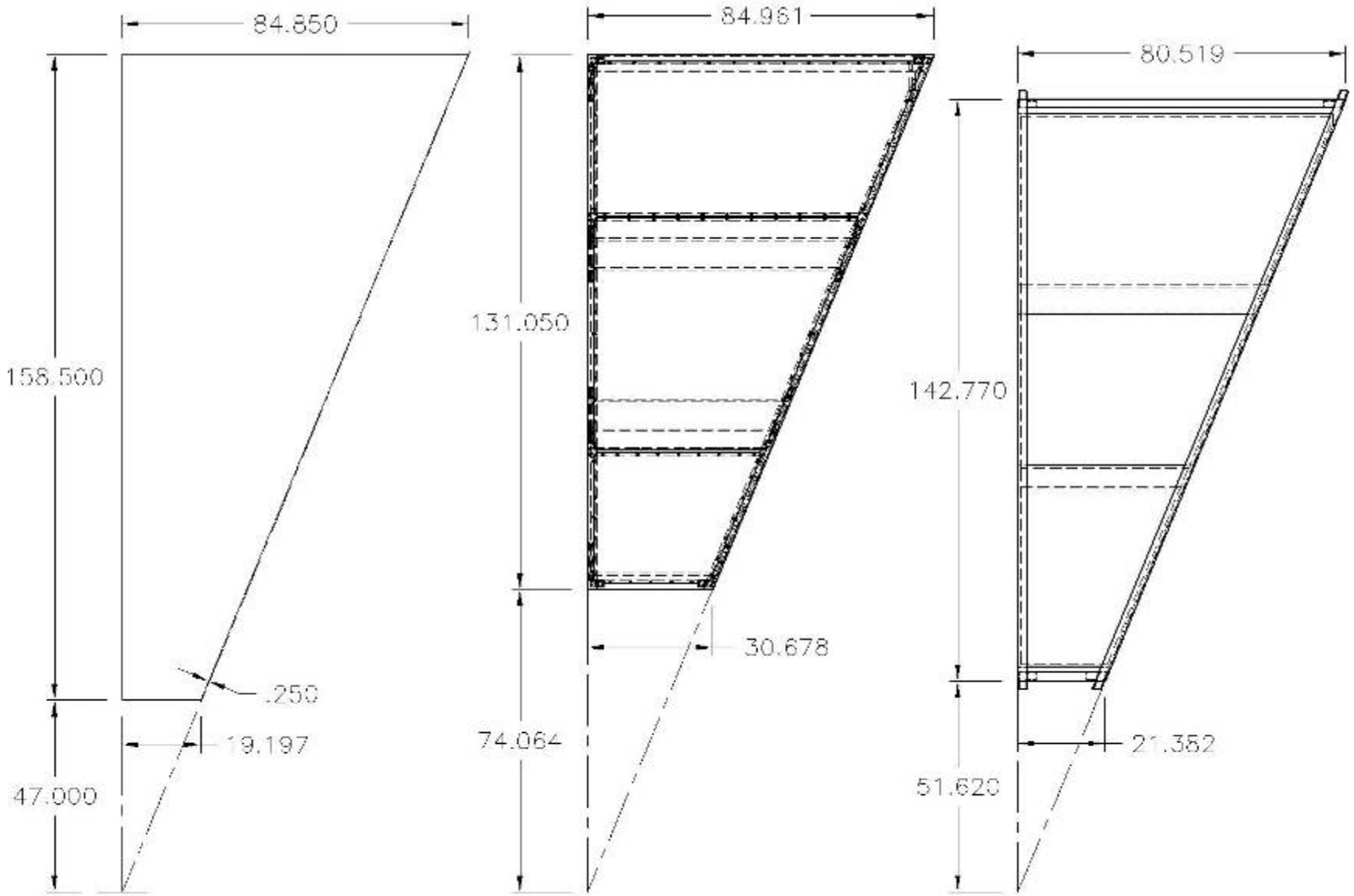
RPC Absorber Concept



RFQ placed with CS

RPC3 Final Design

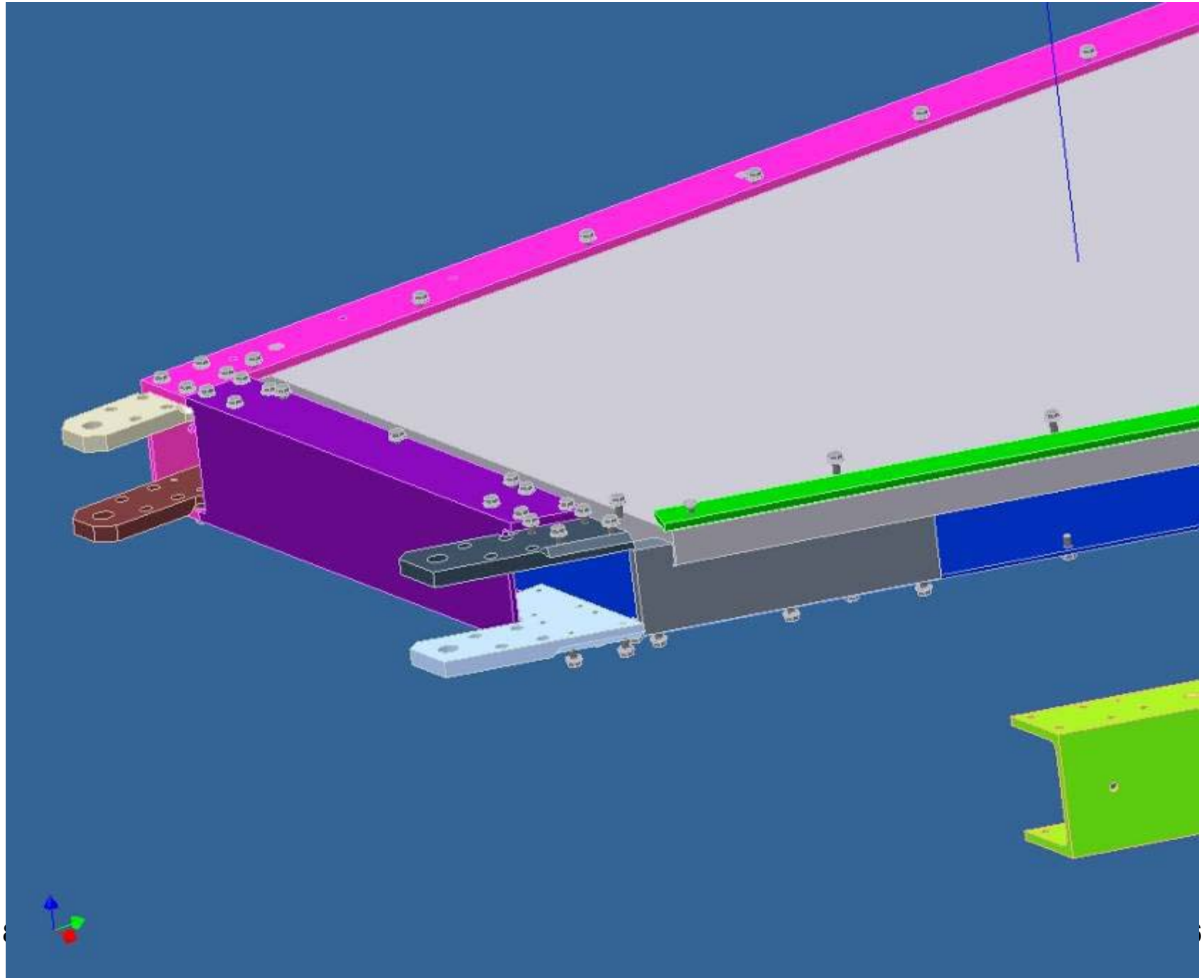
- RPC3 final design is based on Prototype D
- The corner plates have been modified to allow connections between half octants and lifting
- The internal details are the same design, slightly different dimensions
  - All internal fasteners are M6
- RPC3 final is smaller in OD, and goes down to smaller ID
  - Smaller ID is a positive feature for installation

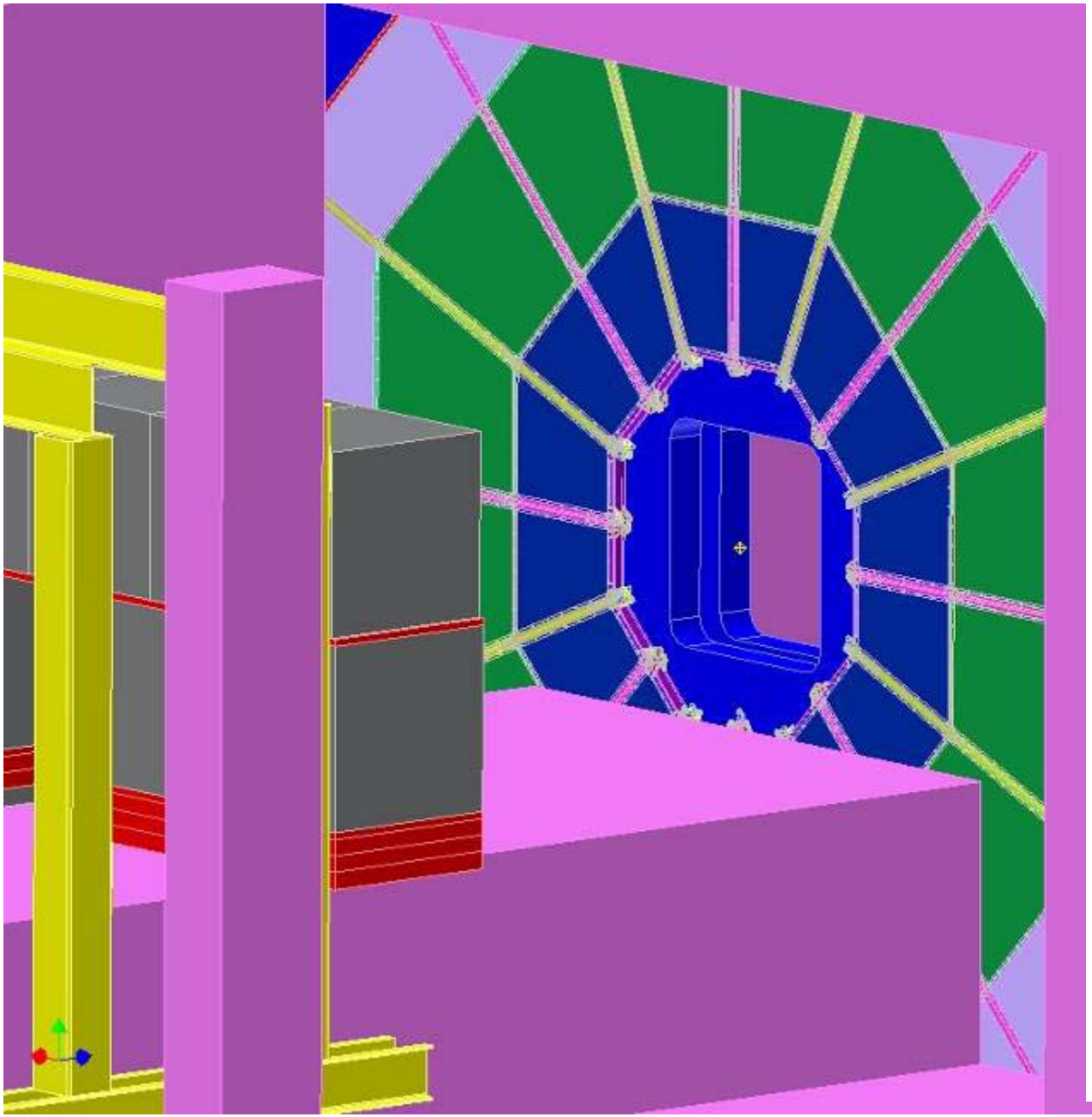


MOCKUP HALF OCTANT

PROTOTYPE D HALF OCTANT

FINAL RPC3 HALF OCTANT

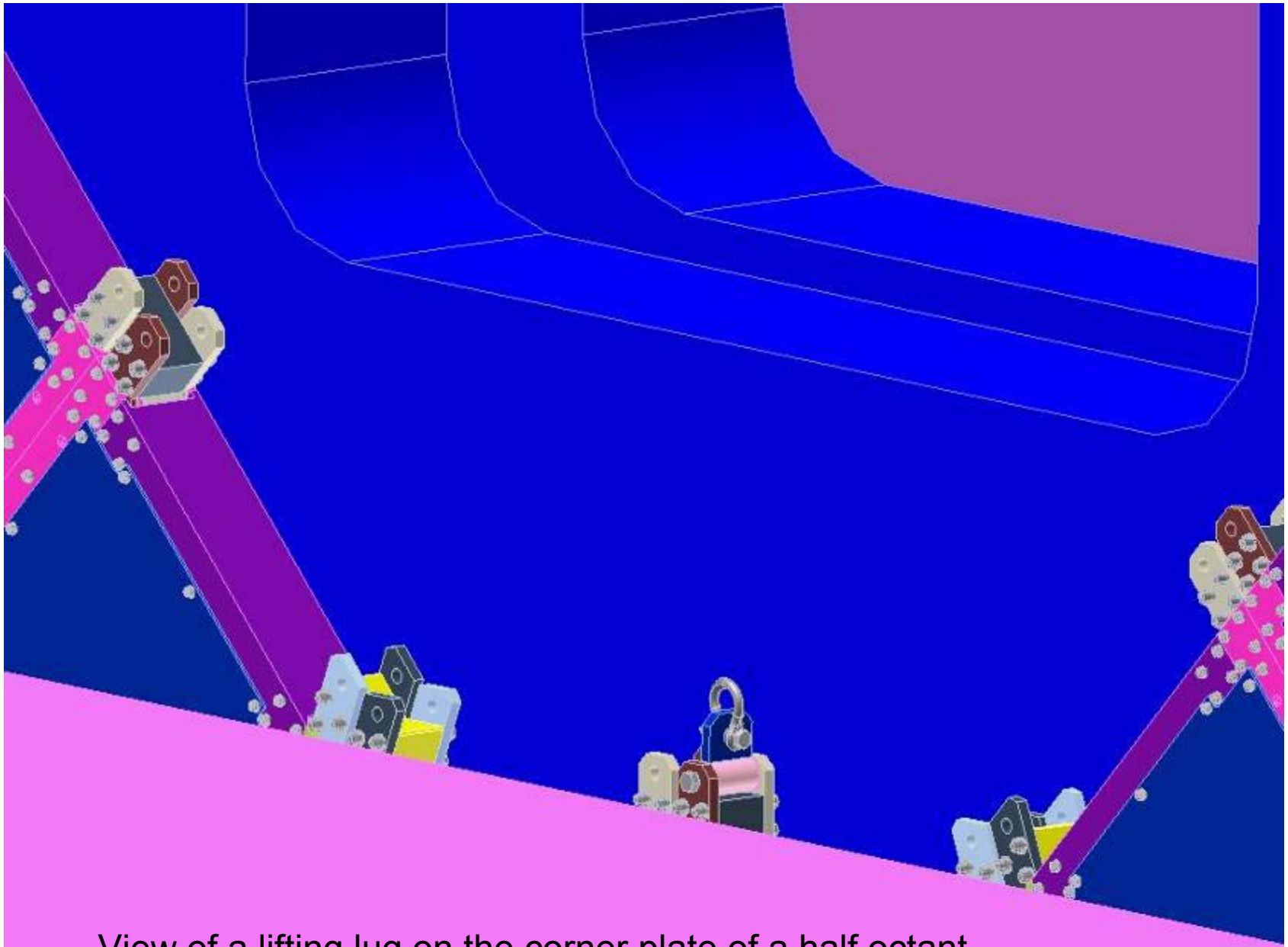




The fact that the inner diameter is smaller in this design allows a very simple half-octant to half-octant connection that can be reached from inside the tunnel.

Threaded rods inserted through aluminum corner blocks connect half octants to each other.

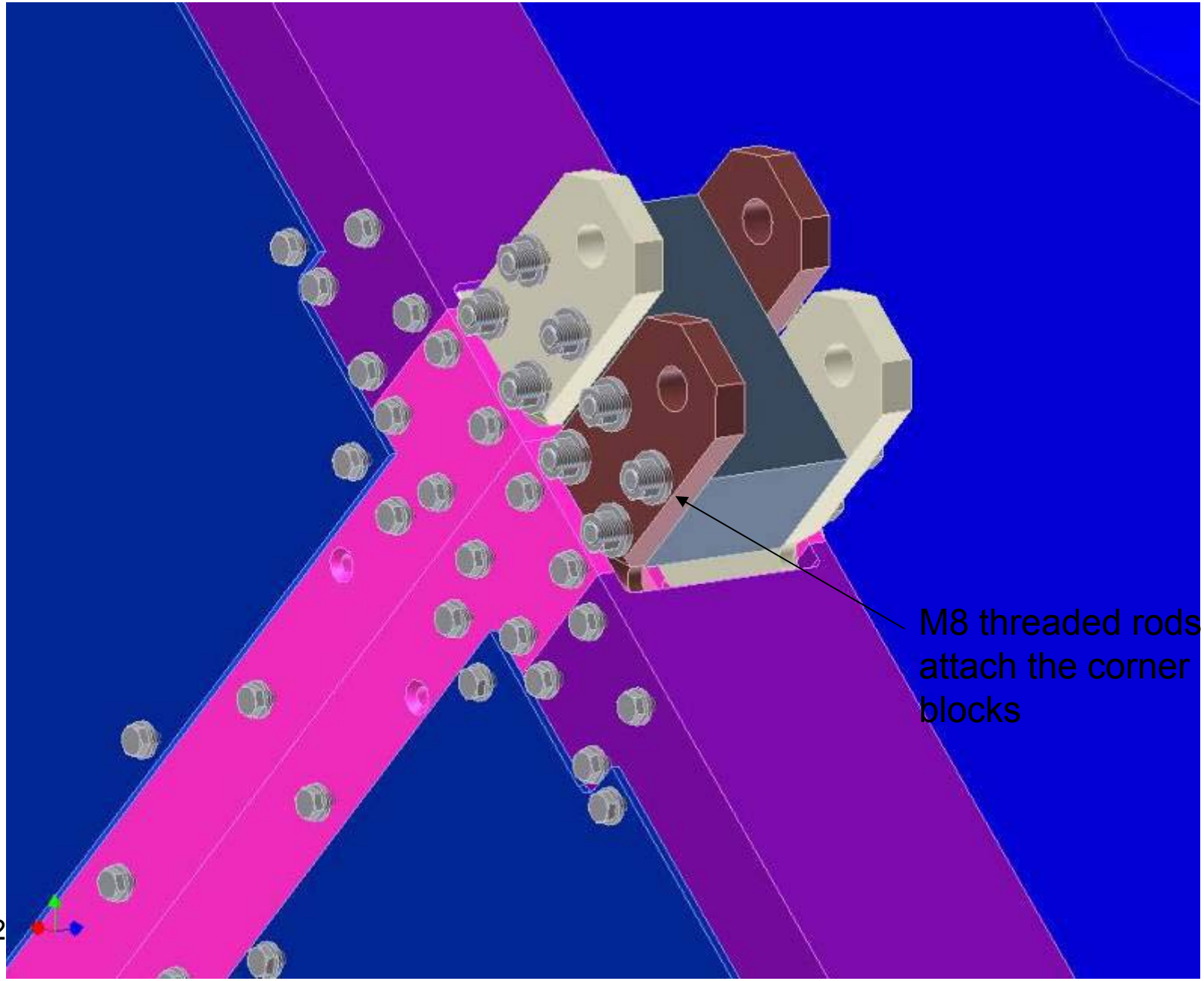
The threaded rods can only be inserted from the tunnel side, assuming that the structure is assembled as close to the muon ID steel as possible. (This is only a problem at mezzanine level.)



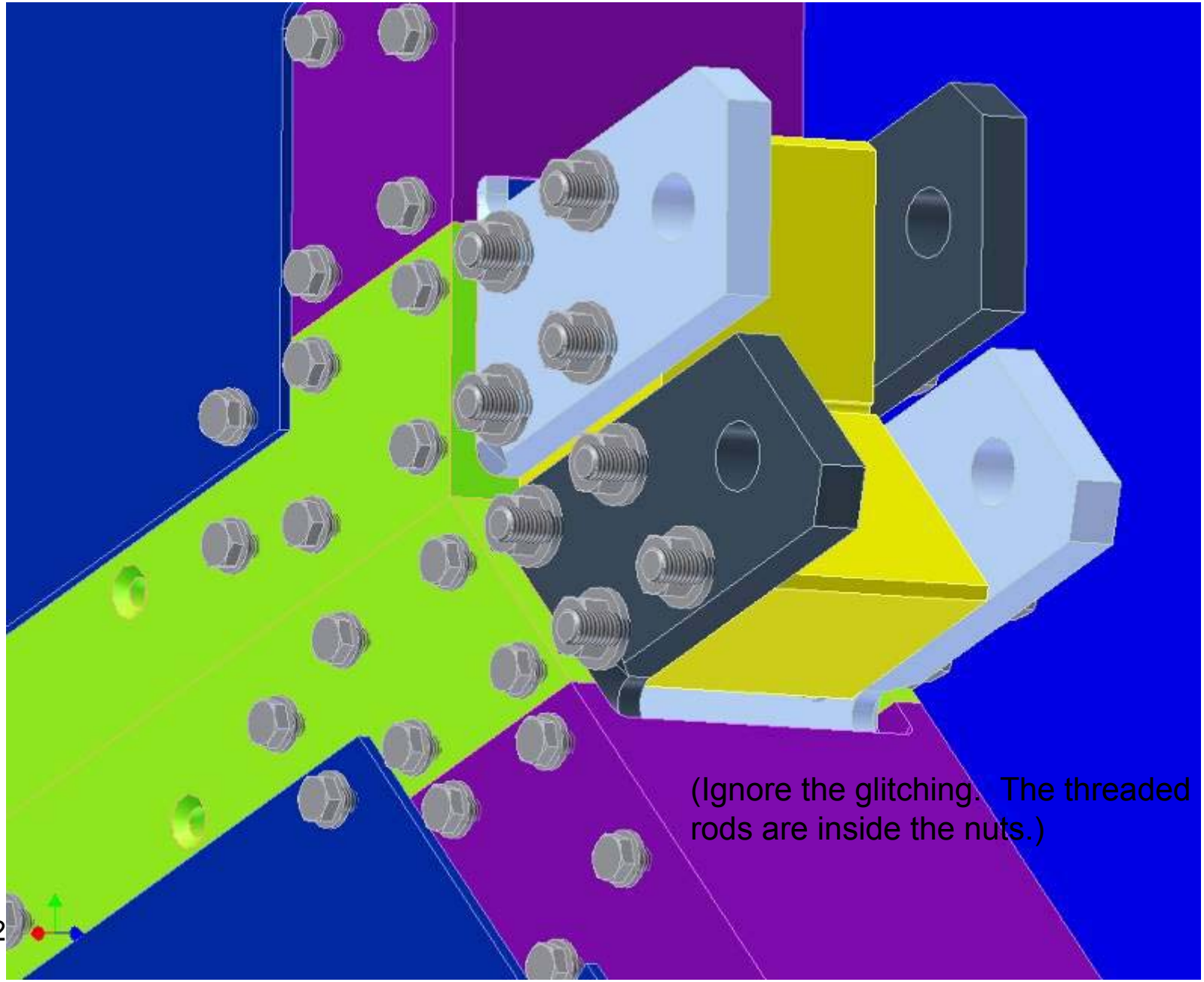
View of a lifting lug on the corner plate of a half octant.

SC magnet not shown, but must be accounted for in assembly.

The straight corner block for the half octant boundary

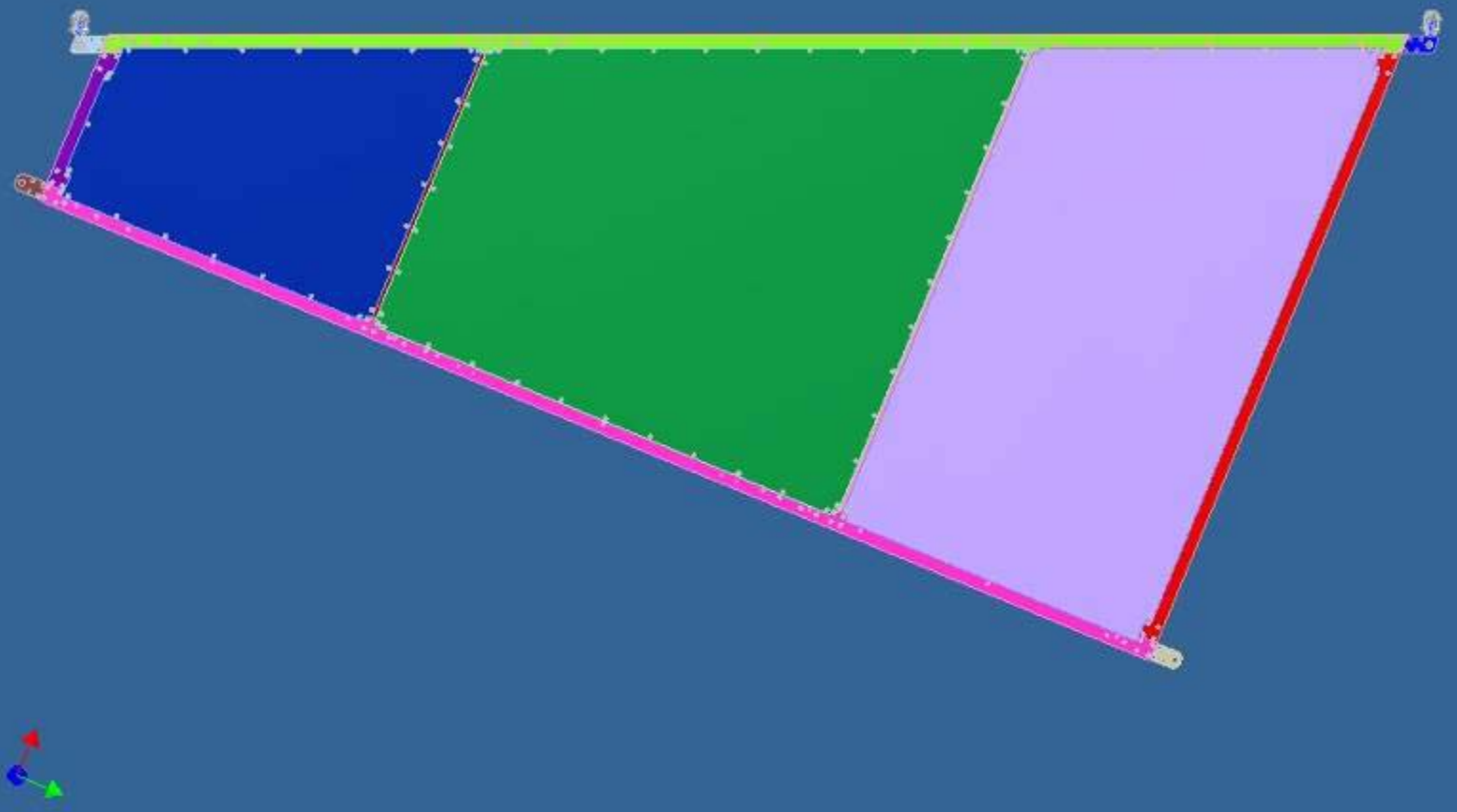


The angled corner block for the octant boundary



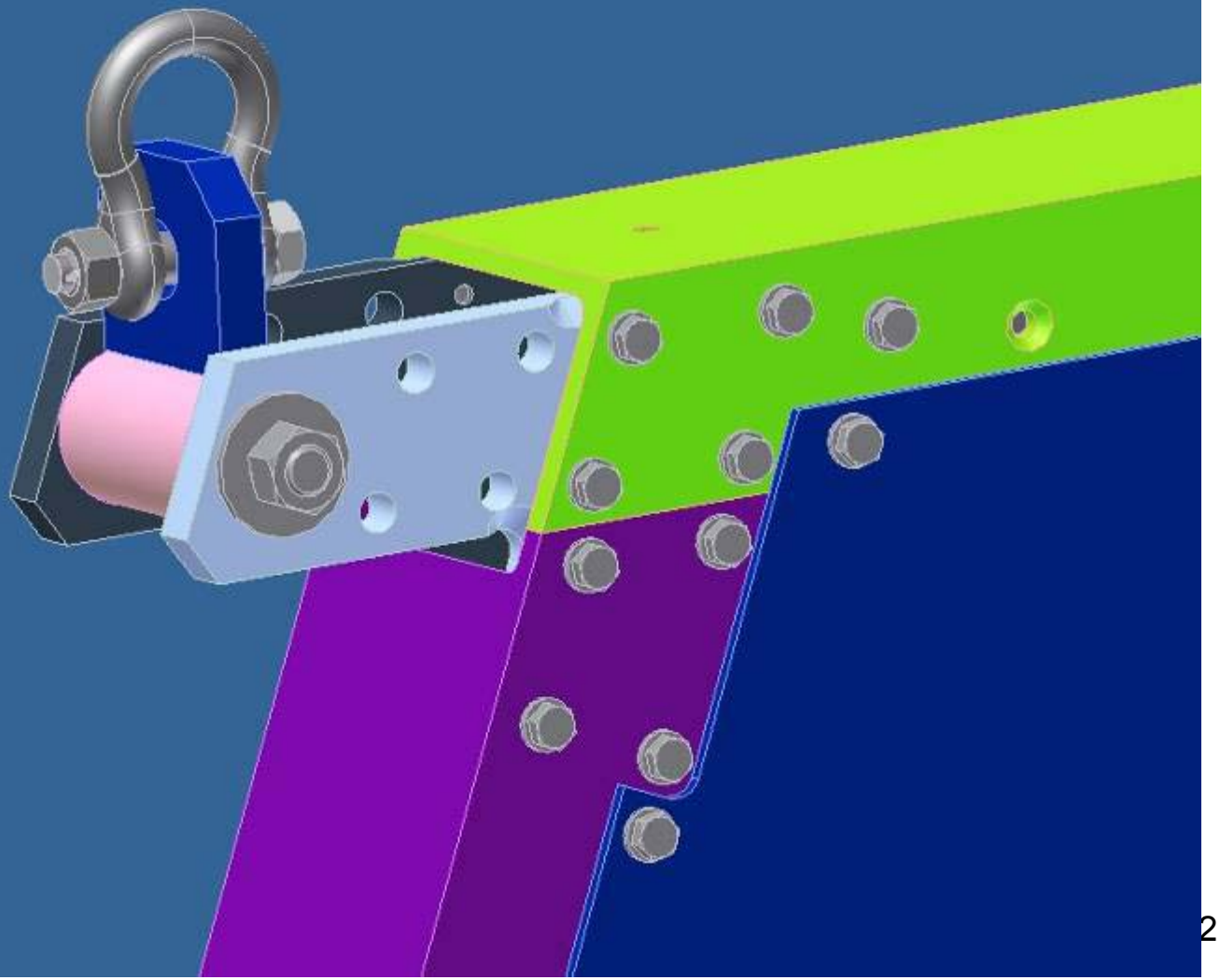
(Ignore the glitching. The threaded rods are inside the nuts.)

Lifting horizontally using the final lift lugs

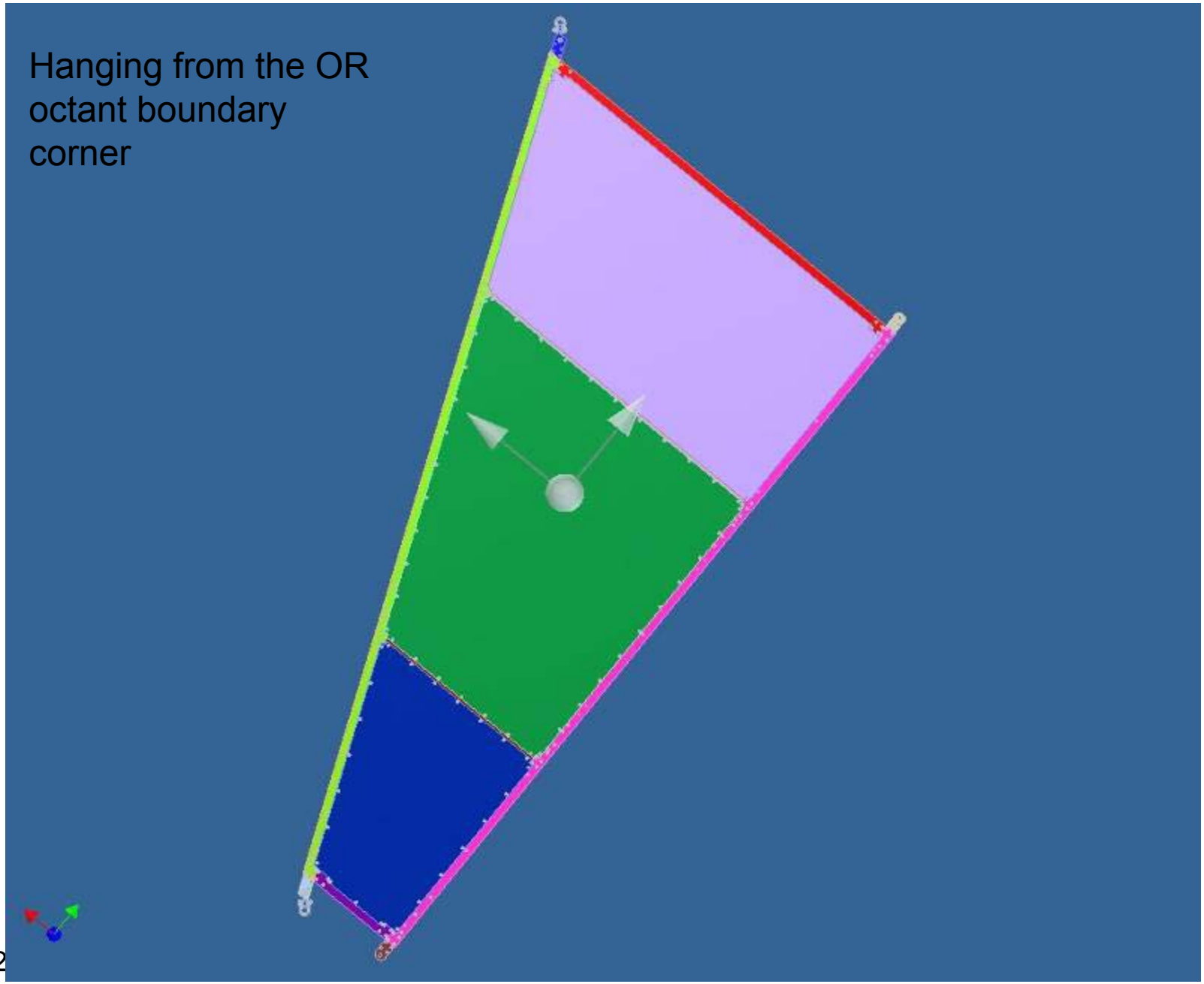


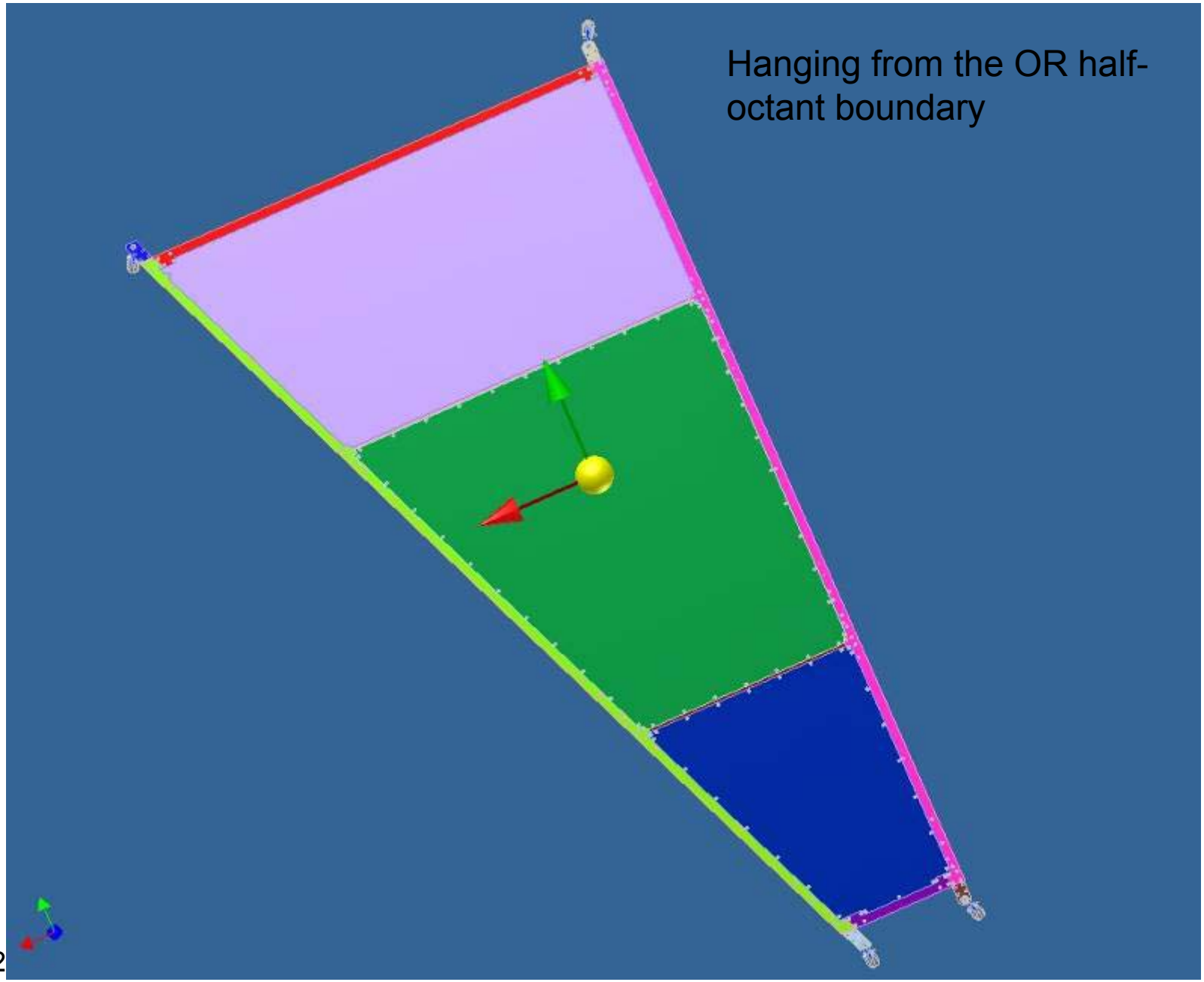
An example shackle on the bolted-on lifting lug.
The bolt is a ½-13 X 4” long hex head

This might be simplified to just a rod to put a hook around because that is easier to disengage during installation

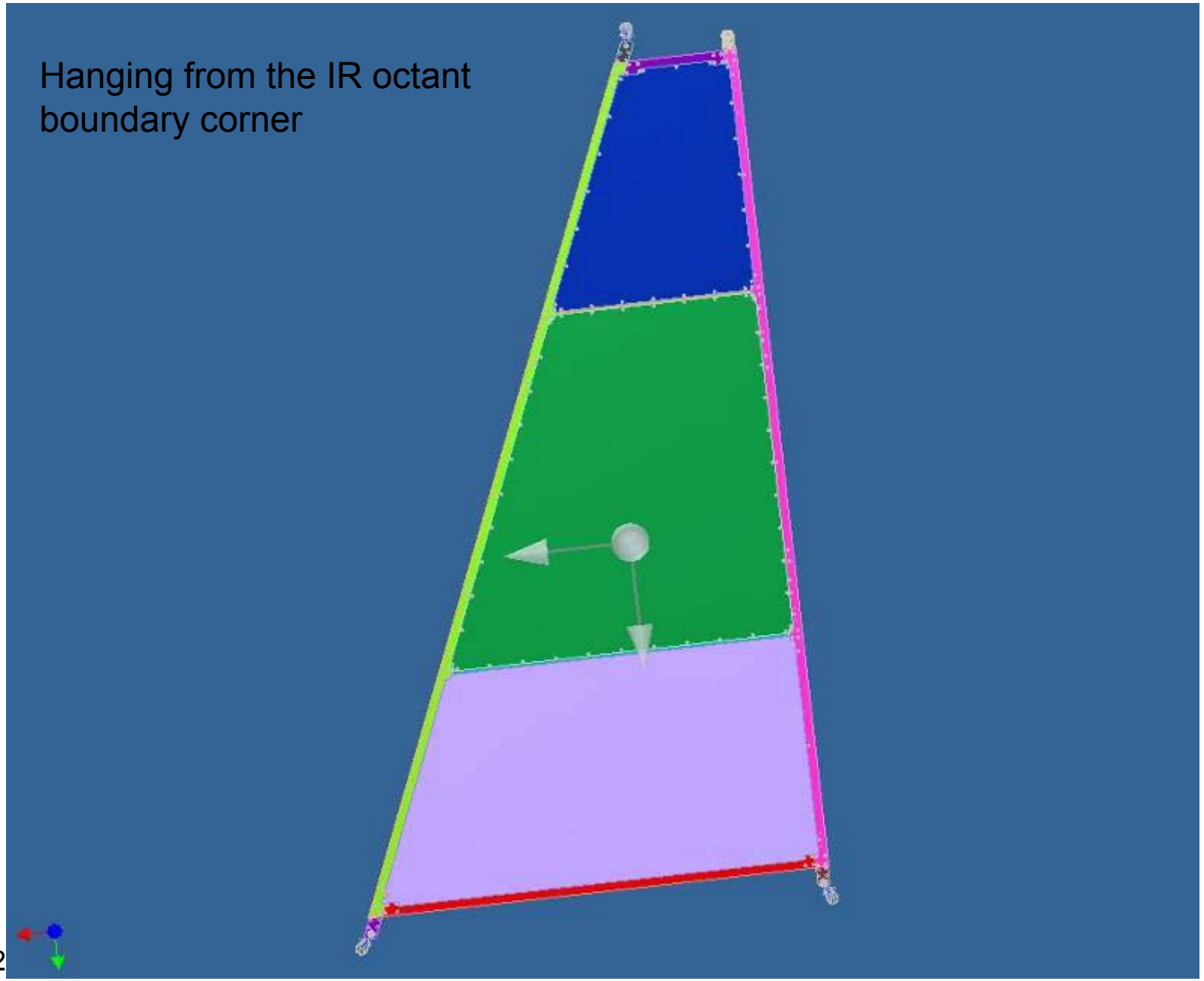


Hanging from the OR octant boundary corner

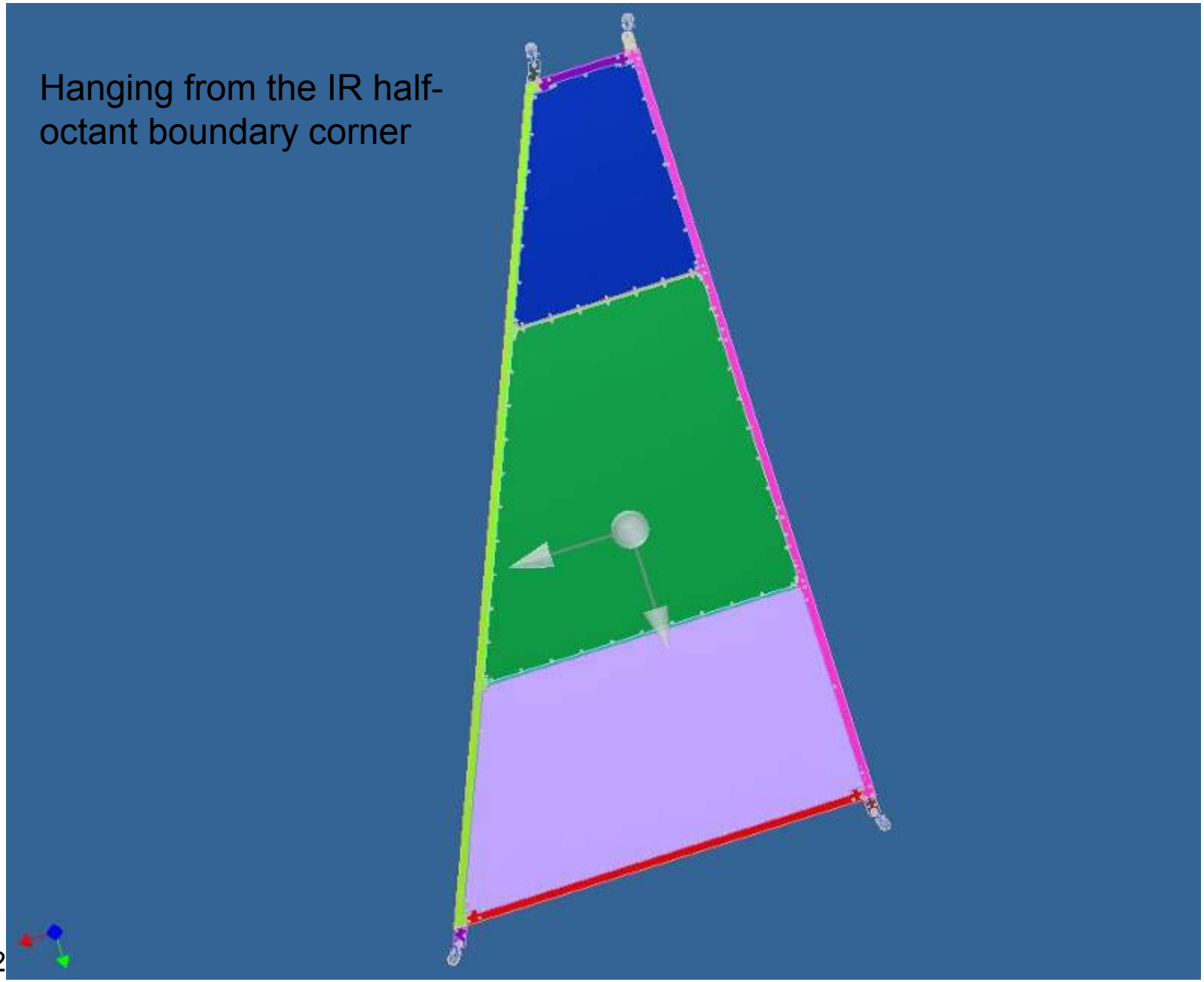


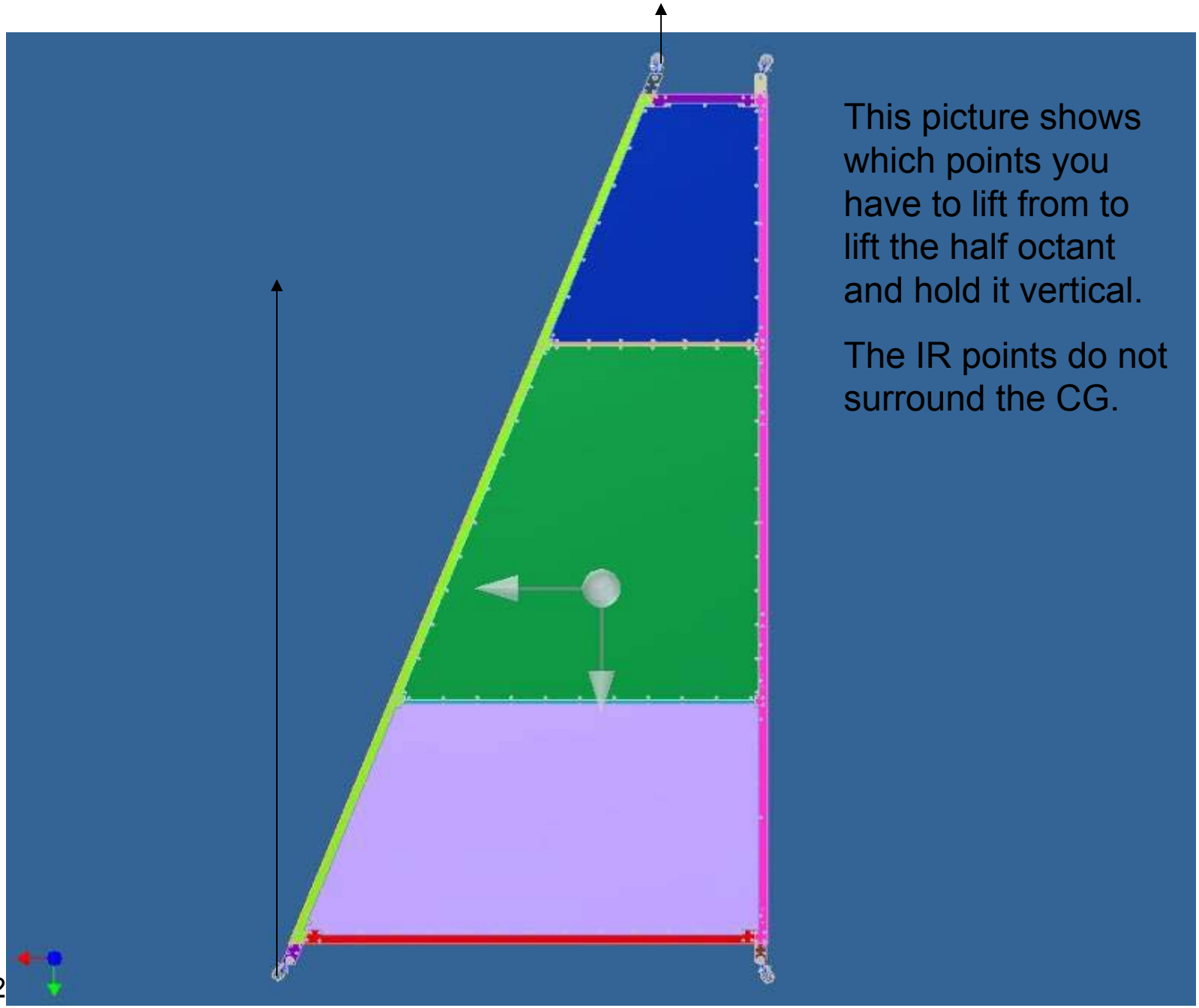

Hanging from the OR half-octant boundary

Hanging from the IR octant boundary corner



Hanging from the IR half-octant boundary corner

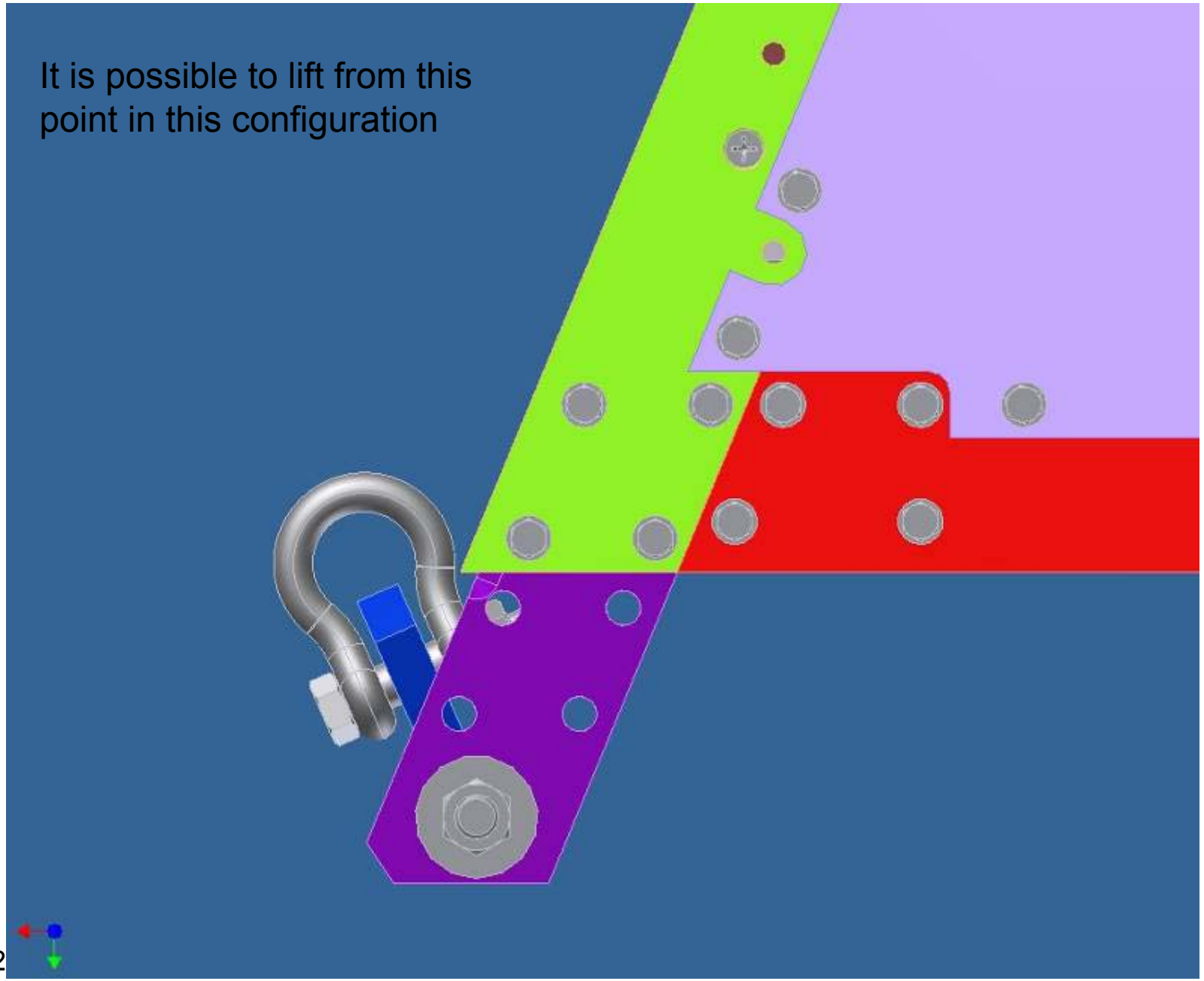


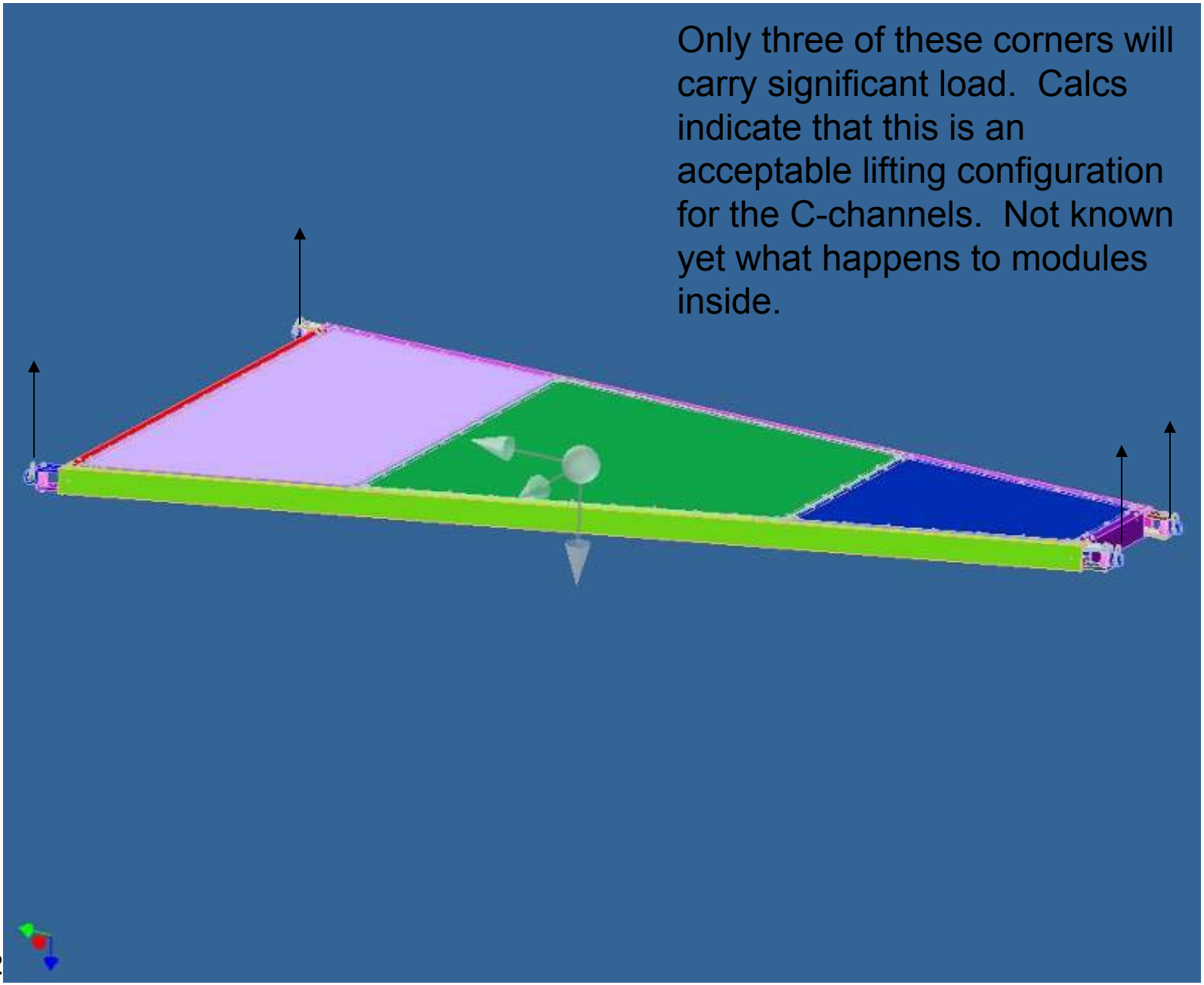


This picture shows which points you have to lift from to lift the half octant and hold it vertical.

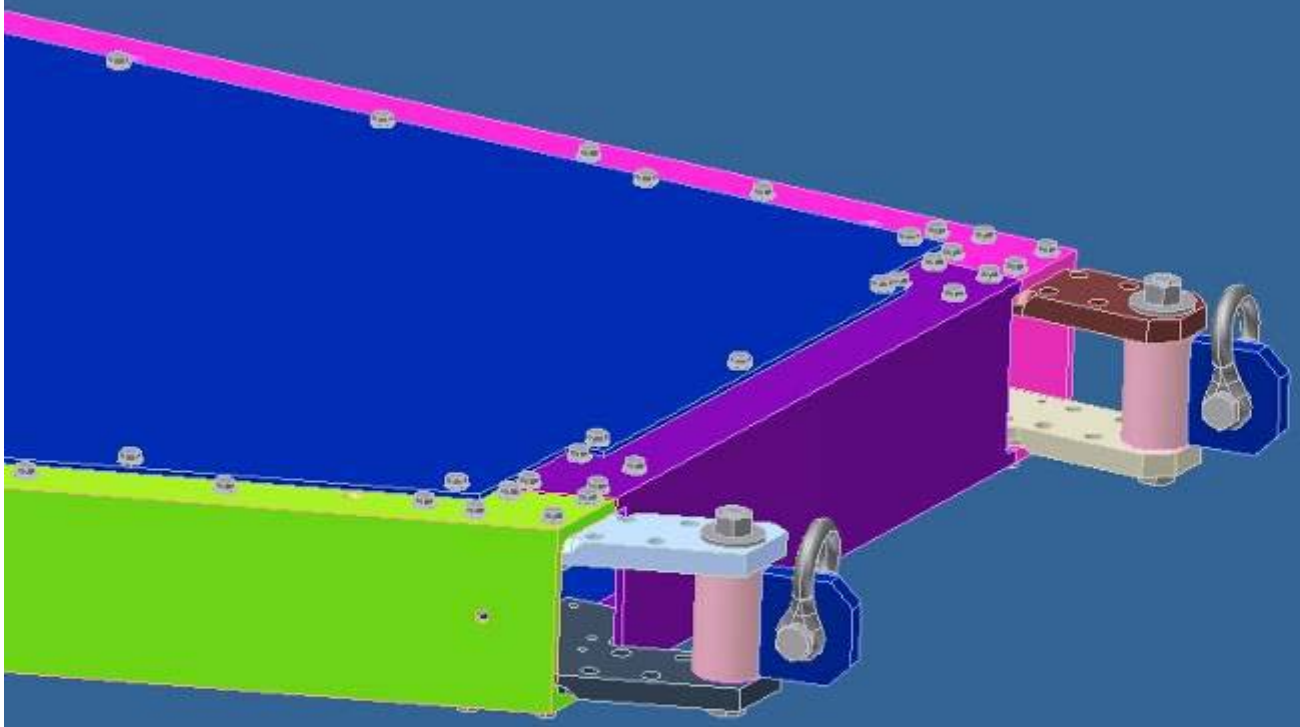
The IR points do not surround the CG.

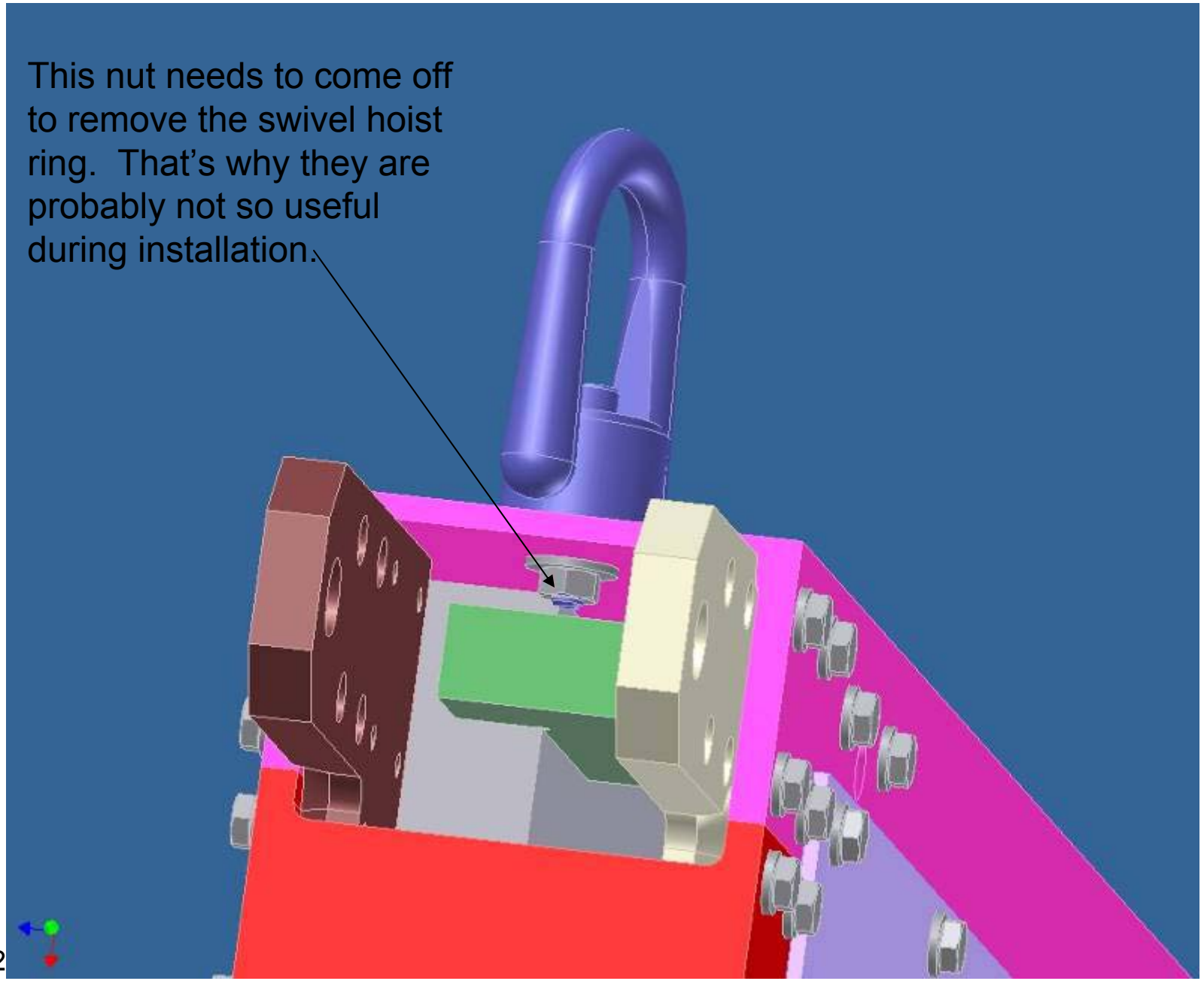
It is possible to lift from this point in this configuration




Only three of these corners will carry significant load. Calcs indicate that this is an acceptable lifting configuration for the C-channels. Not known yet what happens to modules inside.

Close-up of the IR end in a flat lift

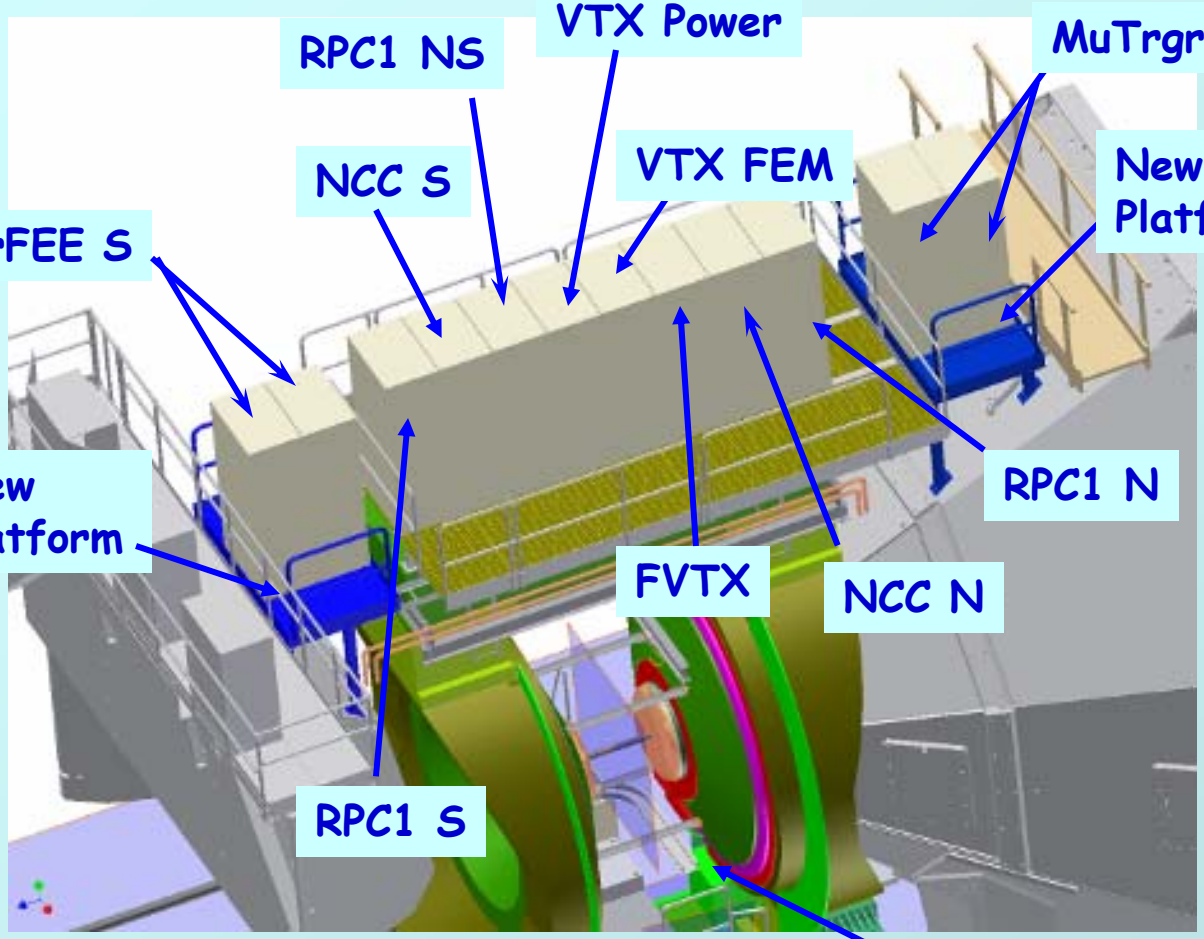



This nut needs to come off to remove the swivel hoist ring. That's why they are probably not so useful during installation.

Summary

- RPC3 is fully modeled and will have manufacturing drawings shortly
- There are still some open installation questions
- These pictures will be available on ftp.

Detector upgrade Rack allotments



No Changes

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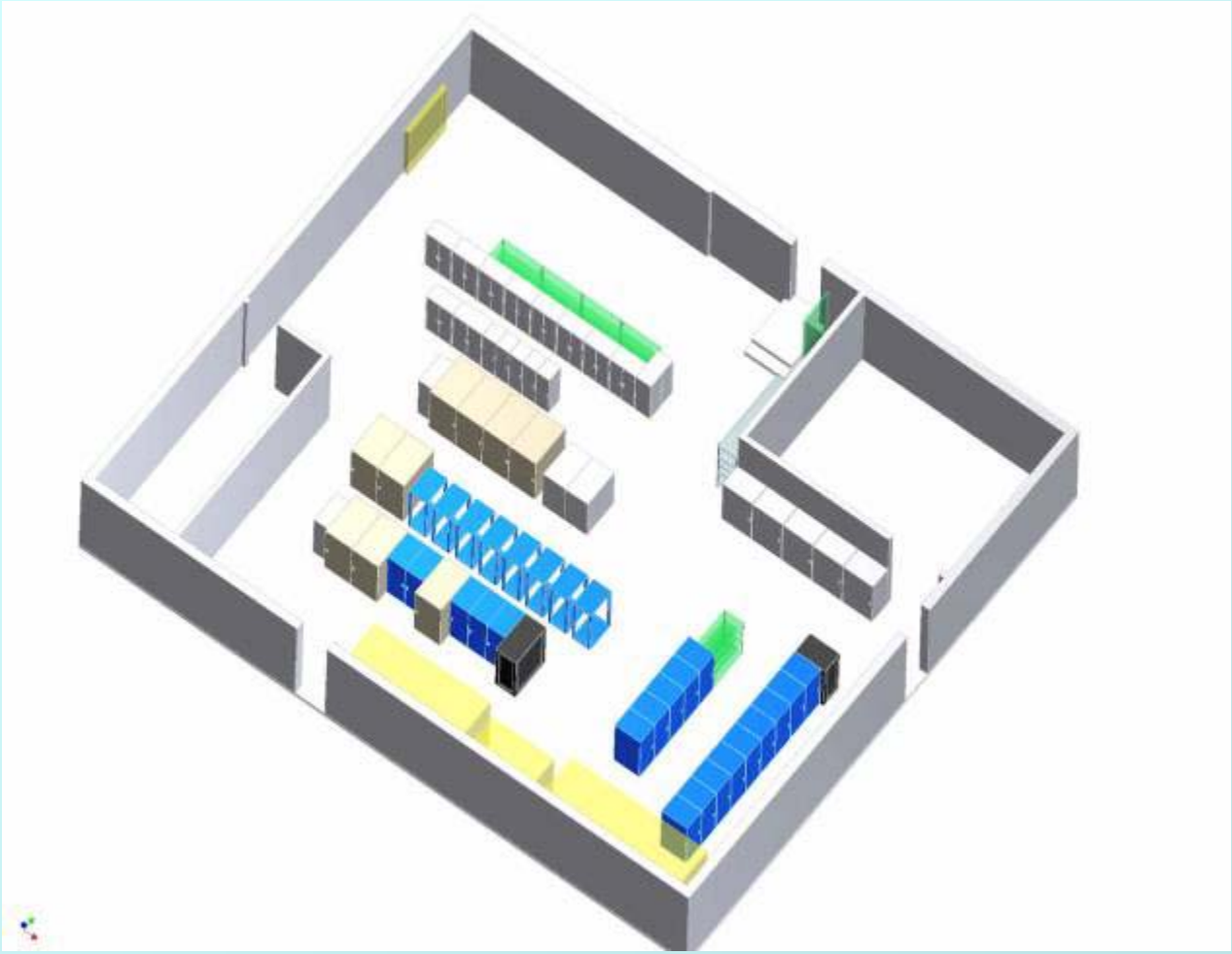
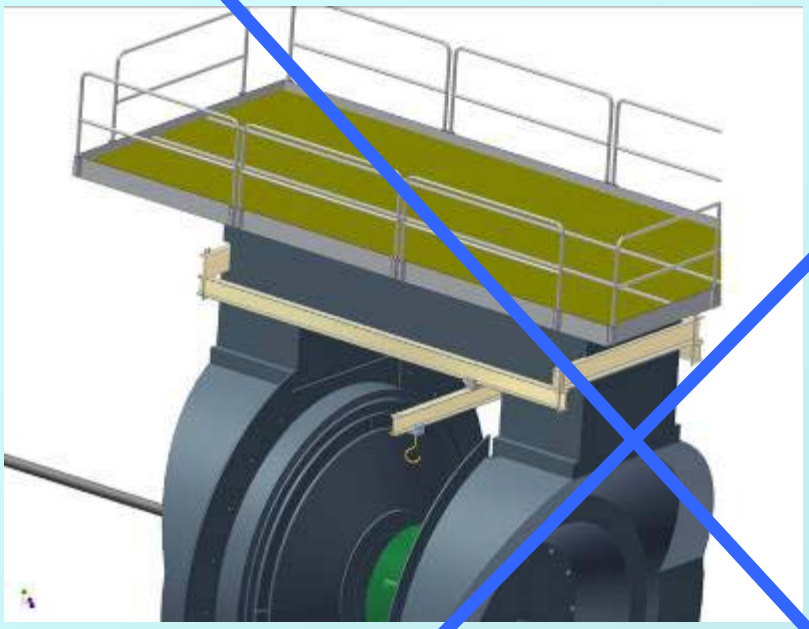
Rack Room Reorganization



Inventor model in progress

CM Crane, Station 1 scaffolding

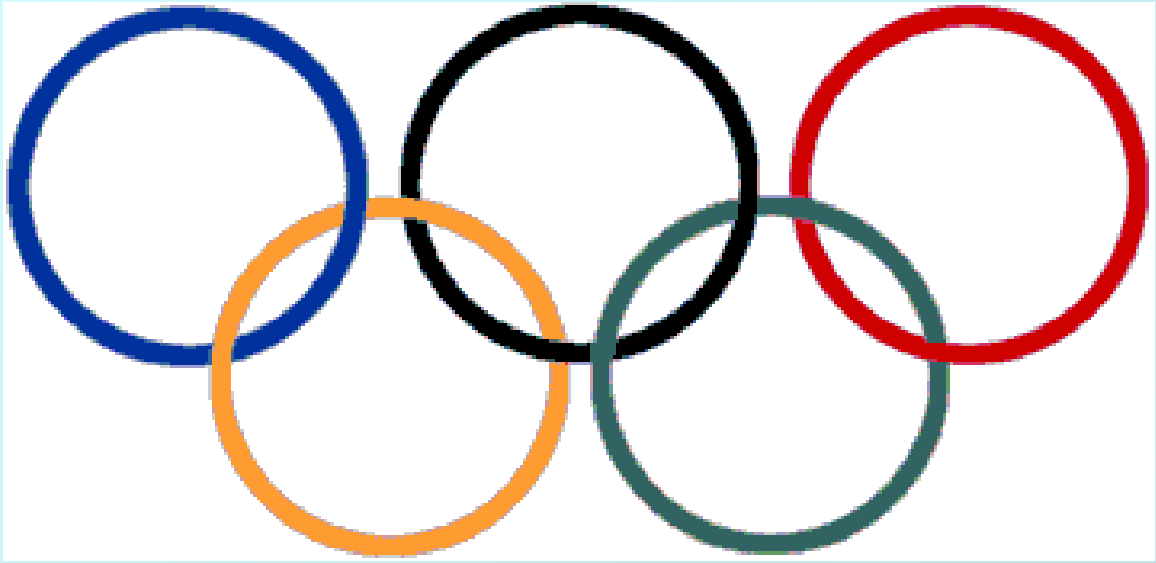


CM Crane procurement postponed indefinitely

Safety, Security, etc.

Beware of arachnids!
They hide in dark places
Waiting to get you.
This could happen to you!

Where To Find PHENIX Engineering Info



Only 4 more days and 86 more gold medals to go

Links for the weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found on the web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm